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## Washington State Adult Blood Lead Registry Update

*Safety & Health Assessment & Research for Prevention (SHARP)*

*SHARP Technical Report 38-12-2004*

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The Washington State Blood Lead Registry was established in 1993. The results of all blood lead level (BLL) tests performed in Washington State are reported to the Washington State Department of Health (DOH), which then forwards adult results to the Safety & Health Assessment & Research for Prevention (SHARP) program at the Department of Labor and Industries (L&I).

The Registry's goal is to prevent lead overexposure and poisoning. SHARP strives to inform and educate workers and employers about the hazards of lead exposure. We also provide technical assistance to employers and industries that may be exposing workers to lead.

### ***Concerning Adults***

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A national goal has been set for the year 2010 to eliminate BLLs of 25 µg/dl or greater in working adults. Between May 1993 and December 31, 2003, SHARP received a total of 66,546 BLL reports (Table 1); approximately 5% of these reports were for individuals with elevated BLLs ( $\geq 25$  µg/dl). For cases where a home address could be obtained, the largest number of elevated blood lead reports was for King County residents (44%), followed by residents of Snohomish (9.9%), Pierce (8.4%), and Spokane Counties (6.5%).

BLLs greater than 40 µg/dl have been associated with psychological and nerve function abnormalities, damage to the kidneys and blood-forming systems, and adverse reproductive health effects for men and women. During 2003, 36 reports in the Registry were for individuals who had BLLs greater than or equal to 40 µg/dl. Of the 698 reports in the Registry with BLLs  $\geq 40$  µg/dl for which gender information was available, 689 (99%) were for males.

**Table 1. Adult blood lead levels—2003 reports and cumulative reports.**

Blood Lead (µg/dl)	January 1-December 31, 2003 (%)	May 15, 1993-December 31, 2003 (%)
< 25	8115 (98%)	63,291 (95%)
25-39	144 (1.7%)	2470 (3.7%)
40-49	25 (0.30%)	558 (0.84%)
50-59	7 (0.084%)	172 (0.26%)
$\geq 60$	4 (0.048%)	55 (0.083%)
TOTAL	8295	66,546

The Registry provides follow-up for individuals with elevated BLLs. The type and extent of follow-up depends on the actual BLL. Individuals with BLLs greater than or equal to 25 µg/dl are sent information on the potential health effects of lead, and ways to reduce their exposure. If the employee consents, we also send educational materials to the employer, and offer SHARP's technical expertise to help reduce lead exposure at specific work sites (we insist on employer follow-up for BLLs greater than 60 µg/dl or if a case had more than one BLL over 50 µg/dl).

In order to determine how workers are being exposed in the State of Washington, we collect employer and occupation information for individuals with elevated BLLs. Adult blood lead tests are usually sponsored by employers who are interested in assessing workplace lead exposures. Blood testing of lead-exposed workers is frequently required by workplace health regulations, and provides valuable information to guide workplace and medical decisions related to lead. If elevated blood lead levels occur, workplace exposures to lead should be reduced.

Industries in which two or more elevated BLL reports were received in 2003 are shown by Standard Industrial Classification (SIC) code in Table 2. *As we have seen previously, most elevated blood lead reports in Washington State originate from workers involved in manufacturing glass (SIC code 3211) and batteries (SIC code 36), in addition to performing hot work (welding and cutting) on steel bridges (SIC codes 1622 and 1611).* Since companies that do not test their workers for lead are not included in the Registry, it is possible that some industries are not seen here, or that some industries are over-represented. It is likely that lead poisoning is a much greater problem than these numbers indicate, because many workers who are exposed to lead likely do not have their blood tested.

**Table 2. Industries with two or more elevated BLL reports ( $\geq 25$   $\mu\text{g}/\text{dl}$ ), January 1 -December 31, 2003**

SIC Code	Description	Reports 25-39 $\mu\text{g}/\text{dl}$	Reports 40-49 $\mu\text{g}/\text{dl}$	Reports 50-59 $\mu\text{g}/\text{dl}$	Reports $\geq 60$ $\mu\text{g}/\text{dl}$	Total Reports $\geq 25$ $\mu\text{g}/\text{dl}$
3211	FLAT GLASS	24	6	1	0	31
1622	BRIDGE, TUNNEL & ELEVATED HIGHWAY CONSTRUCTION	13	4	4	4	25
36*	ELECTRONIC AND OTHER ELECTRIC EQUIPMENT	14	1	0	0	15
1611	HIGHWAY & STREET CONSTRUCTION, EXCEPT ELEVATED HIGHWAYS	7	1	0	0	8
7539	AUTOMOTIVE REPAIR SHOPS, NEC	5	0	0	0	5
3229	PRESSED AND BLOWN GLASS AND GLASSWARE, NOT ELSEWHERE CLASSIFIED	4	1	0	0	5
1795	WRECKING AND DEMOLITION WORK	4	1	0	0	5
5941	SPORTING GOODS STORES AND BICYCLE SHOPS	3	1	0	0	4
1721	PAINTING AND PAPER HANGING	4	0	0	0	4
7999	AMUSEMENT & RECREATION SERVICES, NOT ELSEWHERE CLASSIFIED	3	0	0	0	3
7997	MEMBERSHIP SPORTS & RECREATION CLUBS	3	0	0	0	3
3364	NONFERROUS DIE-CASTING EXC. ALUMINUM	2	0	0	0	2
8641	CIVIC & SOCIAL AND FRATERNAL ASSOCIATIONS	1	1	0	0	2
2326	MEN'S AND BOYS WORK CLOTHING	2	0	0	0	2
1794	EXCAVATING WORK	2	0	0	0	2

\*Figures are reported by 2-digit SIC code if there were fewer than three WA State employers in a 4-digit SIC category (WA State Employment Security, 2001 employer units).

The information on individual workers and employers contained within the Registry is regarded in the strictest confidence. Individual BLL results are protected from public disclosure in any form that would identify the person tested. Information on individual employers is used only to identify industries where exposure reduction interventions can be targeted. In situations of serious lead overexposure, SHARP reserves the right to share information on employers with WISHA, the state Occupational Safety and Health (OSHA) plan. However, this only occurs when an employer has failed to make a good faith effort to address an overexposure situation through voluntary efforts, or when a situation of imminent danger is perceived.

For more information on the lead registry and its activities or on ways to prevent lead overexposure, please contact SHARP at (360) 902-5669 or at 1-888-66-SHARP (toll free).